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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,493	09/19/2003	Kuo-Tang Hsu	N1085-90162	8017
54657	7590	08/09/2005	EXAMINER	
DUANE MORRIS LLP IP DEPARTMENT (TSMC) 4200 ONE LIBERTY PLACE PHILADELPHIA, PA 19103-7396			MACARTHUR, SYLVIA	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

hx

Office Action Summary	Application No. 10/666,493	Applicant(s) HSU ET AL.	
	Examiner Sylvia R. MacArthur	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 20-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/24/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-19, drawn to a wet processing apparatus, classified in class 156, subclass 345.11.
 - II. Claims 20-28, drawn to a wet processing method, classified in class 216, subclass 83.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the apparatus could have performed a materially different method wherein the substrate not an integrated circuit wafer. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

3. During a telephone conversation with Steven Koffs on August 5, 2005 a provisional election was made without traverse to prosecute the invention of the apparatus, claims 1-19. Affirmation of this election must be made by applicant in replying to this Office action. Claims

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20-28 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by APA (admitted prior art), namely Fig. 1 and specification pages 1-4.

Illustrated in Fig. 1 an apparatus is shown with tank 14, cassette 26, and regulating means 46.

Regarding the use of DI water: See the specification page 3 lines 9-12.

7. Claims 1-3, 5, 7, 10, 12, 13, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Jeong (SU 6,228,211).

Regarding claims 1, 2, 5, 12, and 18: Jeong teaches a tank 1, a drain opening 18, and regulating means (bubbling plate 3). See Fig. 1.

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Regarding claims 3 and 13:

Jeong further teaches the use of DI water as

element 13 in Fig. 1.

Regarding claim 7:

Jeong teaches that the bubbling plate

comprises slats and openings see Fig. 2a.

Regarding claim 10:

Jeong teaches that the slats 23 cover the

drain openings.

8. Claims 1-5, 12, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Shindo et al (US 5,845,660).

Shindo et al teaches a tank 20a, a drain opening 24 and a regulating means 25. According to Fig. 3 the drain opening is located at the bottom surface of the tank. Element 19A in Fig. 3 is pure water. The cassette 21 shown in Fig. 3 is configured to hold a plurality of wafers.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shindo et al.

The teachings of Shindo et al were discussed above.

Shindo fails to teach that the regulating means is made of PEEK.

Shindo et al teaches a wet etching apparatus wherein the cassette 21 is made of PEEK in col. 7 lines 15-18. Shindo et al further details the optimal physical properties of PEEK

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that would motivate one to use it as a material of construction in the wet etching environment. Based on this citation it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to construct the regulating means of PEEK.

11. Claims 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong in view of Shindo et al (US 5,845,660).

The teachings of Jeong were discussed above.

Jeong fails to teach that the regulating means is made of PEEK.

Shindo et al teaches a wet etching apparatus wherein the cassette 21 is made of PEEK in col. 7 lines 15-18. Shindo et al further details the optimal physical properties of PEEK that would motivate one to use it as a material of construction in the wet etching environment. Based on this citation it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to construct the regulating means of PEEK.

12. Claims 9, 11, 14, 16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong in view of Sonoda et al (US 6,616,774).

The teachings of Jeong were discussed above.

Jeong fails to teach angling the slats with respect to the regulating plate.

Sonoda et al teaches a wet etching apparatus wherein a rectifying means has openings and angled rods (flow ports 24). See Fig. 1 and col. 4 lines 46-53.

These rods are inclined with respect to the bottom of the tank 20.

The motivation for one of ordinary skill in the art to combine the teachings of Jeong and Sonoda et al is that the inclining helps the contaminants to drain in a more controlled


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fashion and faster from the tank see col. 2 lines 45-63. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to combine the teachings of Jeong and Sonoda et al to angle the slats and openings of the regulating means to control the direction and rate of outlet flow.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the core hours of 9 a.m. and 3 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sylvia R MacArthur
Patent Examiner
Art Unit 1763

August 5, 2005